

# Notice No.2

## Rules and Regulations for the Classification of Naval Ships, January 2022

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2022

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Volume 2, Part 1, Chapter 1, Section 8	1 July 2022	N/A
Volume 2, Part 1, Chapter 3, Sections 5 & 9	1 July 2022	N/A
Volume 2, Part 2, Chapter 1, Section 11	1 July 2022	N/A
Volume 2, Part 4, Chapter 1, Section 5	1 July 2022	N/A
Volume 2, Part 4, Chapter 4, Section 4	1 July 2022	N/A
Volume 2, Part 6, Chapter 1, Section 4	1 July 2022	N/A
Volume 2, Part 7, Chapter 5, Section 10	1 July 2022	N/A
Volume 2, Part 9, Chapter 9, Section 6	1 July 2022	N/A



# Volume 2, Part 1,

## Chapter 1

### General Requirements for Classification of Engineering Systems

#### ■ Section 8

#### ~~Quality assurance scheme~~ Assurance Scheme for machinery Machinery

##### 8.1 General

8.1.1 The Quality Assurance Scheme for Machinery (QAM ~~Scheme~~) is an alternative to direct survey and certification of machinery components and equipment required by the Rules. Under the QAM ~~Scheme~~ LR will consider the extent to which manufacturing processes and control procedures ensure conformity of that machinery to Rules, technical specifications and any other applicable standards or codes.

8.1.2 The QAM is part of the broader Quality Assurance Engineering Schemes (QAES), which is the overarching portfolio for all audit-based survey and certification services to manufacturers. The QAM is applicable to items manufactured under closely controlled conditions. The products for which the QAM is applicable and details of how these schemes are operated are provided in LR's ShipRight Procedure *Approval of a Manufacturer according to Quality Assurance Engineering Schemes (QAES)*.

~~8.1.2 This QAM Scheme is applicable to items manufactured under closely controlled conditions. The products for which the QAM Scheme is applicable are provided in LR's ShipRight Procedure Approval of a Manufacturer according to the Quality Assurance Scheme for Machinery.~~

8.1.3 The QAM ~~Scheme~~ does not reduce the test requirements to be carried out in accordance with LR's Rules.

##### 8.2 Definitions

8.2.1 The following definitions apply in the context of this Section:

##### 8.2.2 QAM ~~Scheme~~ audit

An audit, conducted by LR at the manufacturer's, or their supplier's or sub-contractor's works, of their products and/or processes, which may include direct survey, in order to provide confidence that products are manufactured, tested and inspected in accordance with LR's Rules. Periodicity of surveillance audits is as agreed in the QAM ~~Scheme~~ Certification Schedule, see LR's ~~ShipRight Procedure~~ ShipRight Procedure *Approval of a Manufacturer according to the Quality Assurance Scheme for Machinery* *Quality Assurance Engineering Schemes (QAES)*.

##### 8.2.3 Assessment

A review, conducted by LR, of evidence gained through a number of sources, such as documentation, submitted by the manufacturer or supplier or sub-contractor, and regular QAM ~~Scheme~~ audit reports, in order to verify that products are manufactured, tested and inspected in accordance with the Rules.

##### 8.2.4 Manufacturer

A company that contracts to supply components or equipment products to a customer or user and applies for approval under the QAM ~~Scheme~~.

##### 8.2.5 Supplier

A company that contracts to supply materials, components or equipment products to the M manufacturer applying for approval under the QAM ~~Scheme~~.

##### 8.2.6 Sub-contractor

A company who contracts to deliver a service to a supplier or manufacturer under the agreed QAM ~~Scheme~~ arrangements.

##### 8.3 QAM ~~Scheme~~ Arrangements arrangements

8.3.1 A manufacturer may apply to be approved under the QAM ~~Scheme~~ where the following requirements are met:

- (a) The manufacturer has a quality management system which has been certified as meeting the requirements of ISO 9001 *Quality Management Systems - Requirements*, or an industry-specific equivalent standard, by a certification body accredited by a member of the International Accreditation Forum and recognised by LR.
- (b) The manufacturer has processes in place suitable for the products to be certified under the QAM ~~Scheme~~.
- (c) The manufacturer has a satisfactory and documented history of quality performance in the supply of products for which certification under the QAM ~~Scheme~~ is requested.

8.3.2 The scope and arrangements for survey, identification and certification of products covered by the QAM ~~Scheme~~ are to be agreed with LR and will be detailed in a Scheme Certification Schedule. The S survey will be based on a technical audit approach, focussing on product realisation. Direct survey may also be used where it is considered appropriate to do so.

8.3.3 The QAM ~~Scheme~~ procedures given in LR's ~~ShipRight Procedure~~ ShipRight Procedure *Approval of a Manufacturer according to the Quality Assurance Scheme for Machinery* to *Quality Assurance Engineering Schemes (QAES)* are to be complied with.

8.3.4 Where LR is satisfied that the manufacturer meets all of the requirements of the QAM Scheme, and that it is appropriate for the products being manufactured, LR will issue the manufacturer with a QAM Scheme Approval Certificate which will list products covered.

8.3.5 LR reserves the right to carry out unscheduled audits, with appropriate notice, at the manufacturer's works or their suppliers' and sub-contractors' works.

8.3.6 Once every three years, a full re-certification assessment of QAM Scheme compliance, including an audit of the manufacturer's works, will be conducted by LR.

8.3.7 The manufacturer is to advise LR of changes to the product, processes or suppliers or sub-contractors which would affect compliance with the QAM Scheme or LR's Rules. Any deviations from the approved plans or specifications are to be reported to LR and written approval obtained prior to dispatch of the items.

8.3.8 Where it is considered that the manufacturer no longer meets the approval requirements for the QAM Scheme, the QAM Scheme Approval Certificate will be suspended. In these circumstances, the manufacturer will be notified in writing of LR's reasons for suspension of the scheme and the manufacturer will revert to direct survey and issue of LR certificates.

8.3.9 **QAM Scheme product certificates** Where the manufacturer is approved according to the QAM Scheme, they will be entitled to issue 'QAM Scheme product certificates'. These certificates are to clearly detail the product being certified and are to be validated by an authorised representative of the manufacturer. ~~The certificates are to be countersigned by LR to certify that the Rule requirements for that product are being met.~~ They are to bear the QAM mark, QAM approval number and statements by the manufacturer certifying that the product has been made by an approved process in accordance with LR's Rules and that the certificate is issued in accordance with the requirements of the QAM. Details regarding these statements are further described in LR's ShipRight Procedure *Approval of a Manufacturer according to Quality Assurance Engineering Schemes (QAES)*.

8.3.10 The certificate format is to be approved by LR. Variations in the wording of the statements are permitted with written approval from LR.

8.3.11 The process of issue of the certificates, including if they are electronic or hardcopy, will be agreed by LR based on the systems in place at the manufacturer.

8.3.12 Copies of all certificates are to be supplied to LR by an agreed means and frequency.

8.3.13 Where a certificate is issued according to the QAM requirements it is considered equivalent to an LR Certificate issued under direct survey.

## 8.4 Acceptance of purchased materials, components and equipment

8.4.1 The manufacturer is to establish and maintain procedures and controls to ensure compliance with LR's requirements for certification of products from its suppliers. The manufacturer is to ensure that purchased products that are required to be certified in accordance with [Ch 3 Rolled Steel Plates, Strip, Sections and Bars](#) to [Ch 10 Equipment for Mooring and Anchoring](#) of the ~~Rules for Materials~~ [Rules for the Manufacture, Testing and Certification of Materials](#) are made at works which have been approved by LR for the type and grade of product being supplied. The manufacturer's system for control of purchased products is to be based on one or a combination of the following alternatives:

- Product certification by LR at the supplier's works in accordance with the requirements of the Rules.
- Product certification by a supplier separately approved by LR under the QAM Scheme or other LR Quality Scheme covering those products.
- Product certification by the manufacturer in accordance with quality processes for control of suppliers of purchased products included within the scope of the manufacturer's QAM Scheme approval. These quality schemes are to ensure compliance with Rule requirements for the purchased products.

### 8.4.2 Manufacturers' certificates issued under the QAM Scheme.

Where the manufacturer's system for control of purchased products from suppliers is based on [Vol 2, Pt 1, Ch 1, 8.4 Acceptance of purchased materials, components and equipment 8.4.1\(c\)](#) and Surveyors have confirmed that LR Rules are being satisfied, the manufacturer will be permitted to accept 'Manufacturers' certificates issued under the QAM Scheme', in lieu of LR Certificates for purchased products. They are to bear the QAM mark, QAM approval number and statements by the manufacturer certifying that the product has been made by an approved process in accordance with LR's Rules and that the certificate is issued in accordance with the requirements of the QAM. Details regarding these statements are further described in LR's ShipRight Procedure *Approval of a Manufacturer according to Quality Assurance Engineering Schemes (QAES)*. ~~The certificates must bear the QAM Scheme mark and the following statement:~~

~~"This certificate is issued under the arrangements authorised by Lloyd's Register (operating entity, e.g. EMEA) in accordance with the requirements of the Quality Assurance Scheme for Machinery and Scheme number, QAM....."~~

Variations in the wording of the statements are permitted with written approval from LR.

# Volume 2, Part 1, Chapter 3 Requirements for Design, Construction, Installation and Sea Trials of Engineering Systems

## ■ Section 5 Machinery space arrangements

### 5.4 Collision load

(Part only shown)

5.4.1 Unless an accurate analysis of the collision load is submitted and found acceptable by LR, the collision load is to be determined from:

where the load  $P_{\text{coll}}$  is taken as the I  
where

$T$  = buoyancy tank clearance to skirt tip, in metres, (negative) for ACVs  
= lifted clearance from keel to water surface, in metres, (negative) for hydrofoils  
= ship's deep draught to the underside of keel amidships, in metres, for all other ships

## ■ Section 9 Steam turbines

### 9.4 Hydraulic tests

9.4.4 Condensers are to be tested in the steam space to 1,0 bar. The water space is to be tested to the maximum pressure which the pump can develop at ship's full deep draught with the discharge valve closed plus 0,7 bar, with a minimum test pressure of 2,0 bar. Where the operating conditions are not known, the test pressure is to be not less than 3,4 bar, see [Vol 2, Pt 7, Ch 1, 16 Testing Piping Design Requirements](#).

# Volume 2, Part 2, Chapter 1 Reciprocating Internal Combustion Engines

## ■ Section 11 Factory Acceptance Test and Shipboard Trials of Internal Combustion Engines

### 11.4 Shipboard trials

11.4.7 For both manual and automatic engine control systems, acceleration and deceleration through any barred speed range, is to be demonstrated. The transit times are to be equal or less than the times stated in the approved documentation and are to be recorded. This also applies when passing through the barred speed range in reverse rotational direction, especially during the stopping test. The ship's draft draught and speed during all these demonstrations are to be recorded. Where a controllable pitch propeller is fitted, the pitch is also to be recorded.

## Volume 2, Part 4, Chapter 1 Propellers

### ■ Section 5 Documentation required for design review

#### 5.2 Plans

(Part only shown)

5.2.1 Plans of the propeller, together with the following particulars, are to be submitted:

- (c) Estimated ship speed at design deep loaded draught in the free running condition at maximum shaft power and corresponding revolutions per minute (see [Vol 2, Pt 4, Ch 1, 5.2 Plans 5.2.1.\(b\)](#) and [Vol 2, Pt 4, Ch 1, 5.2 Plans 5.2.1.\(d\)](#)).

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## Volume 2, Part 4, Chapter 4 Podded Propulsion Units

### ■ Section 4 Structure design and construction requirements

#### 4.1 Pod structure

(Part only shown)

**Table 4.4.1 Podded propulsion unit - fabricated structure requirements**

Symbols

$T$  = the vessel scantling draft design draught, in metres, as in [Vol 1, Pt 3, Ch 1, 5.2 Principal particulars](#)

## Volume 2, Part 6, Chapter 1 Steering Gear

### ■ Section 4 Performance

#### 4.2 Performance requirements for rudder-type steering systems

(Part only shown)

4.2.1 The main steering gear is to be:

- (a) Of adequate strength and capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest operational sea-going draught and running ahead at maximum ahead service speed and under the same conditions, from 35° on either side to 30° on the other side in not more than 28 seconds, which shall be demonstrated in accordance with [Vol 2, Pt 1, Ch 3, 16.4 Testing](#);

(Part only shown)

4.2.2 The auxiliary steering gear is to be:

- (b) Of adequate strength and capable of putting the rudder over from 15° on one side to 15° on the other side in not more than 60 seconds with the ship at its deepest operational sea-going draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater; and

## **Volume 2, Part 7, Chapter 5 Ship Type Piping Systems**

### ■ *Section 10* **High pressure sea-water systems**

#### **10.2 Pump units**

*(Part only shown)*

10.2.3 The total pumping capacity of the HPSW pumps with one pump out of action shall provide for the greatest of the following:

- (c) The amount required for a major fire outside the spaces protected by fixed spray systems, using 100 m<sup>3</sup>/hr boundary cooling for each fire. The minimum number of fires to be considered is as follows:
- Displacement at ~~design~~ **deep** draught of under 4,000 tonnes – one fire
  - Between 4,000 and 10,000 tonnes – two fires
  - Between 10,000 and 20,000 tonnes – three fires
  - Over 20,000 tonnes – four fires

## **Volume 2, Part 9, Chapter 9 Fire Safety and Ship Safety Systems**

### ■ *Section 6* **Ship safety systems**

#### **6.3 Flooding detection systems**

6.3.1 A flooding detection system is to be fitted for watertight spaces below the damage control deck that:

- (a) have a volume, in cubic metres, that is more than the ship's moulded displacement per centimetre immersion at ~~the~~ **the deepest** ~~scantling~~ draught; or
- (b) have a volume more than 30 cubic metres, whichever is the greater.

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